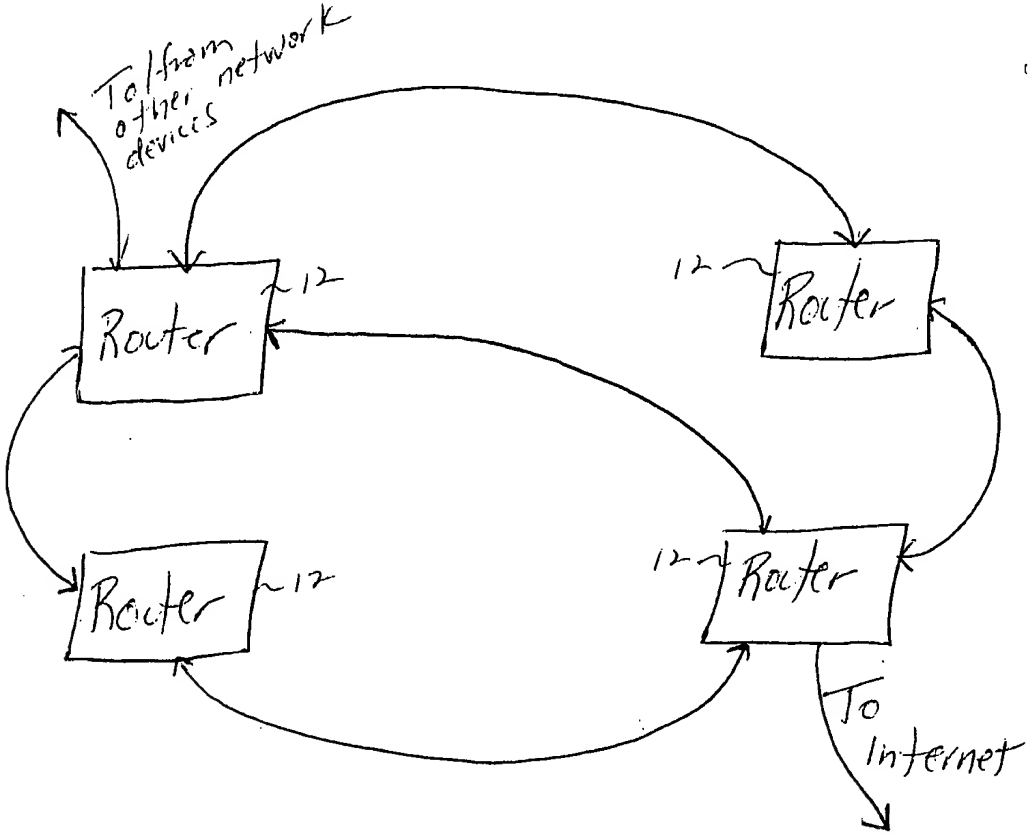

To/from other network devices
10
Router
12
Router
12
Router
12
Router
12
To Internet

FIGURE 1

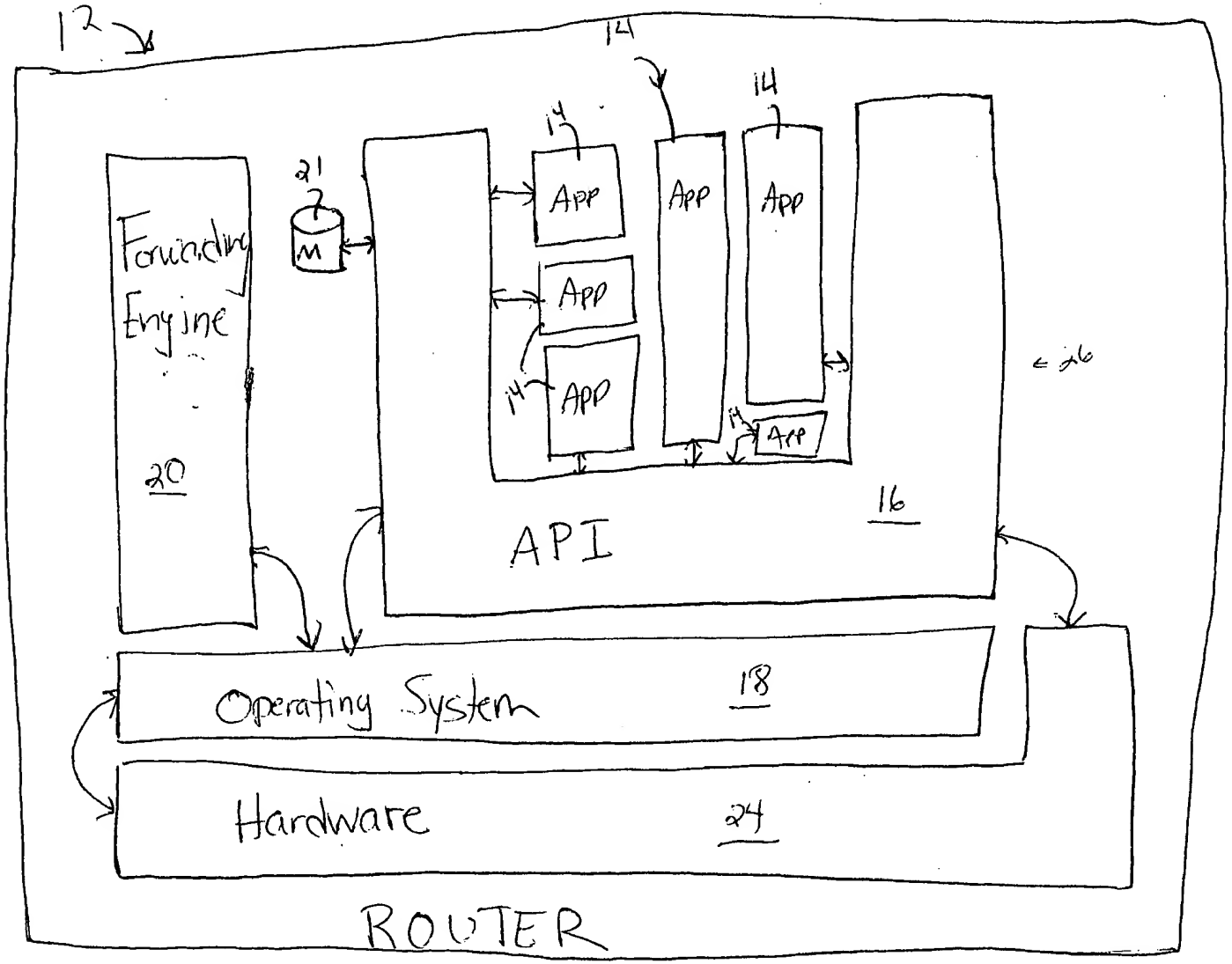

12
14
14
14
14
21
M
Forwarding Engine
20
App
App
App
App
App
API
16
26
Operating System
18
Hardware
24
ROUTER

FIGURE 2

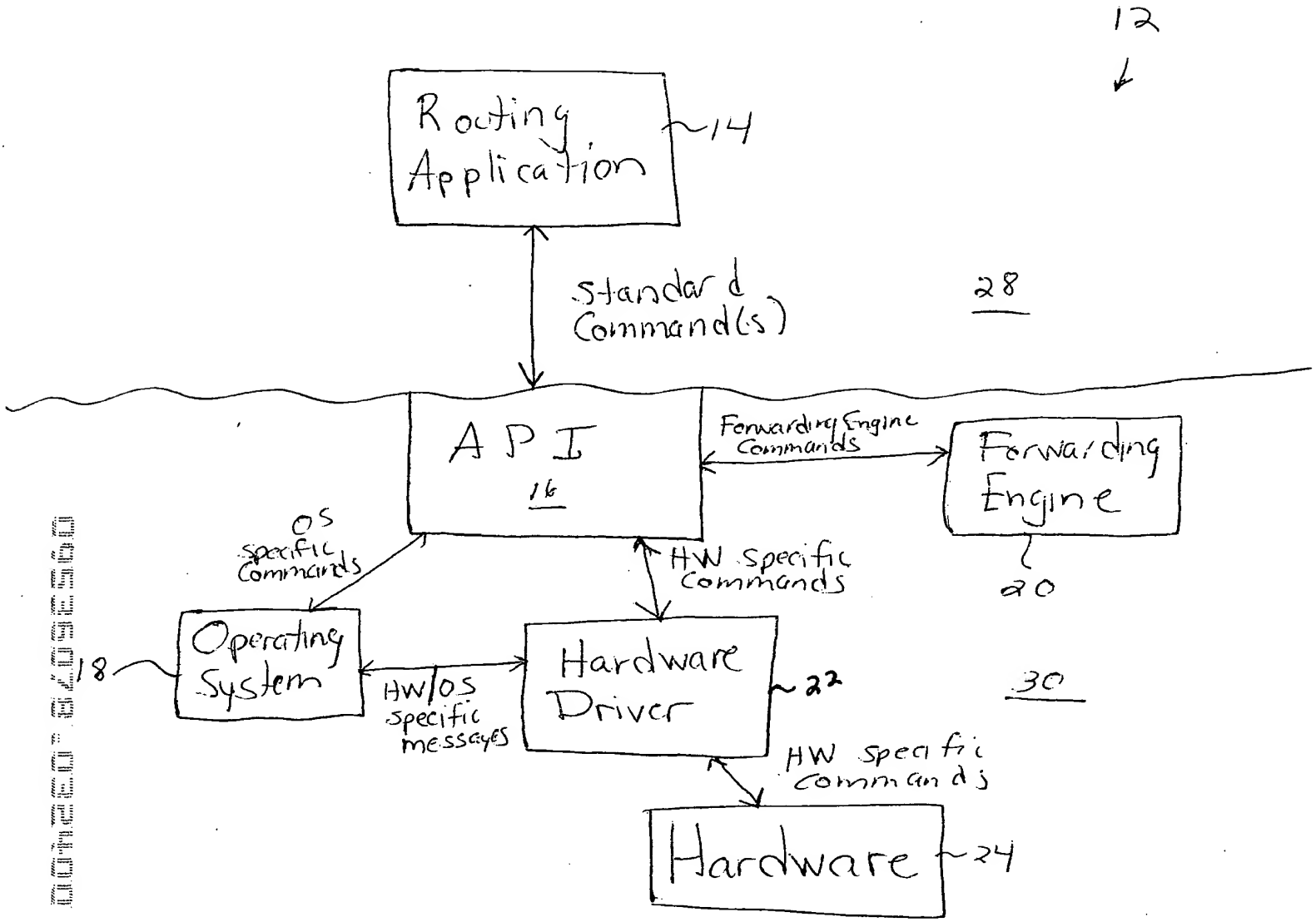
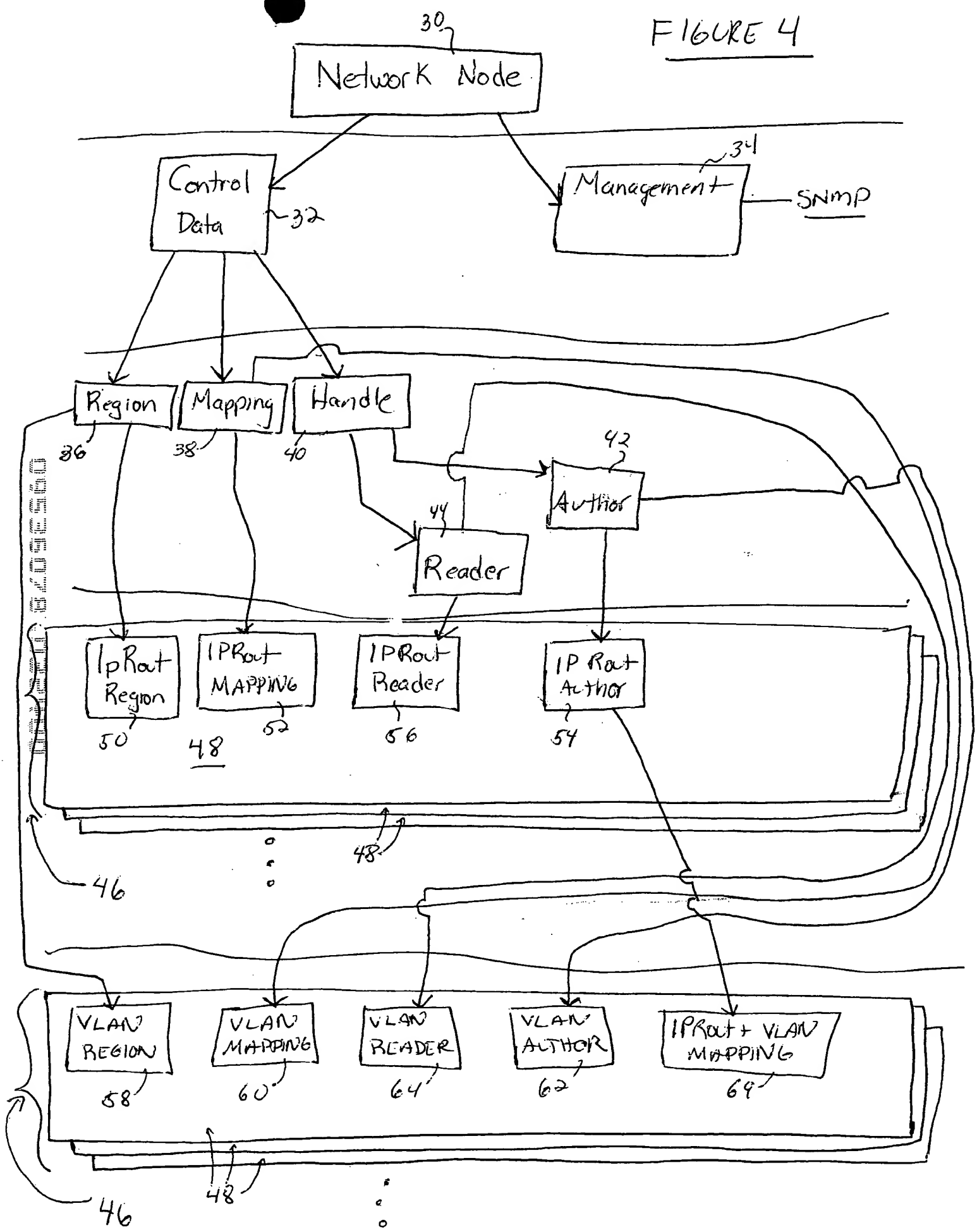

12
Routing Application
14
standard Command(s)
28
API
16
Forwarding Engine Commands
Forwarding Engine
20
OS specific Commands
HW specific commands
Operating System
18
HW/OS specific messages
Hardware Driver
22
30
HW specific commands
Hardware
24

Figure 3

FIGURE 4


30
Network Node
Control Data
32
Management
34
SNMP
Region
Mapping
Handle
36
38
40
42
Author
44
Reader
IpRat Region
IPRat MAPPING
IPRat Reader
IP Rat Author
50
48
52
56
54
48
46
VLAN REGION
VLAN MAPPING
VLAN READER
VLAN AUTHOR
IPRat + VLAN MAPPING
58
60
64
62
69
48
46

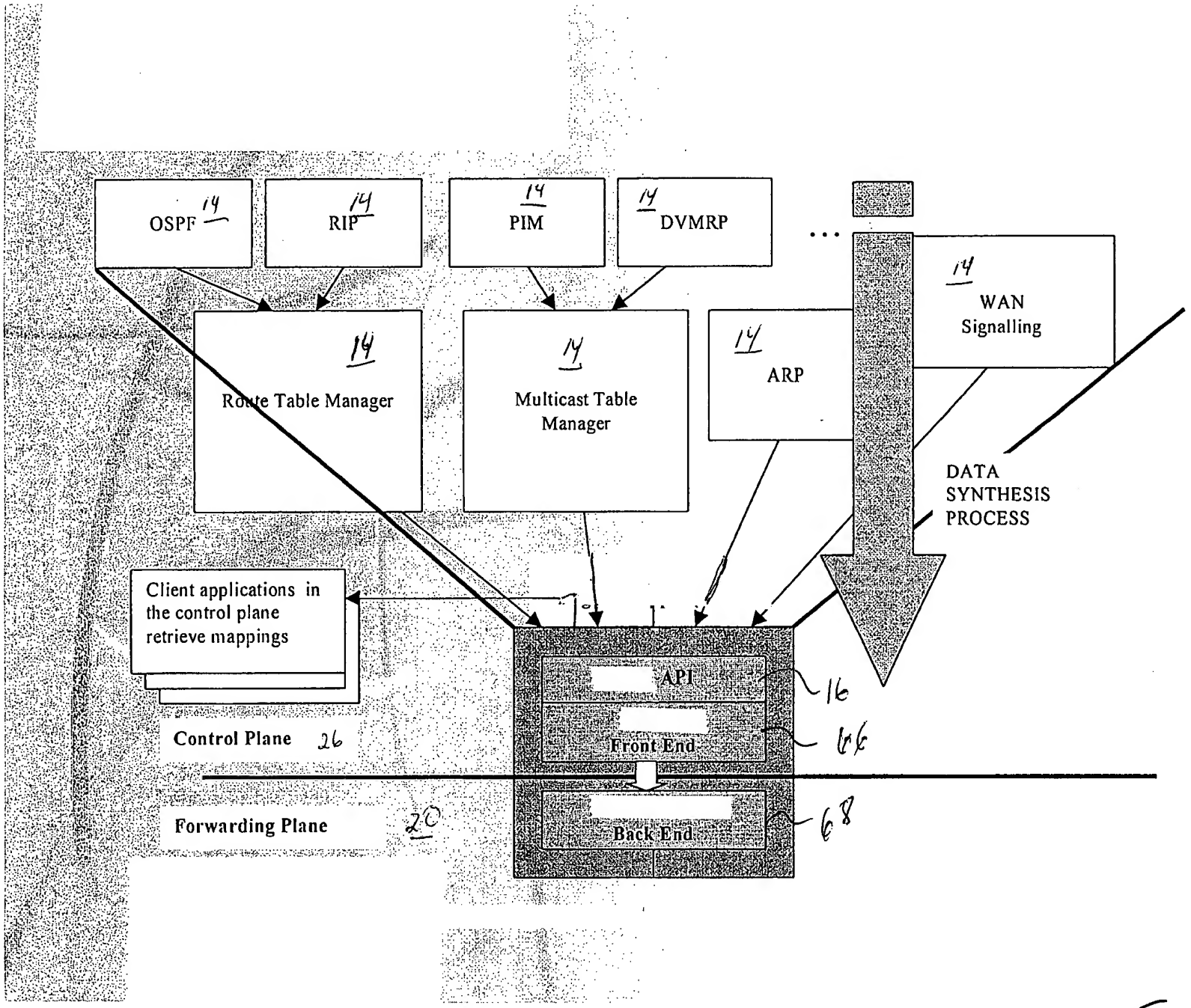

OSPF 14
RIP 14
PIM 14
DVMRP 14
...
14
WAN Signalling
14
Route Table Manager
14
Multicast Table Manager
14
ARP
DATA SYNTHESIS PROCESS
Client applications in the control plane retrieve mappings
API 16
Front End 66
Back End 68
Control Plane 26
Forwarding Plane 20

FIGURE 5

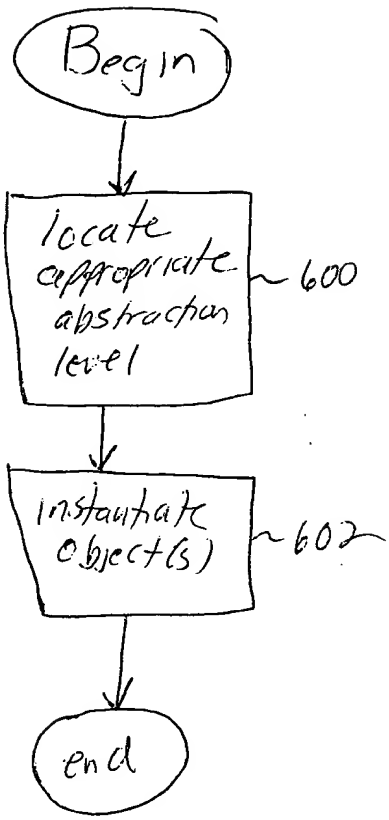

Begin
locate appropriate abstraction level
600
instantiate object(s)
602
end

FIGURE 6